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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,860	12/22/2000	David Carlton Moore	088305/0129	8558
7590 William T. Ellis FOLEY & LARDNER Washington Harbour 3000 K Street, N. W., Suite 500 Washington, DC 20007-5109			EXAMINER ZHEN, LI B	
			ART UNIT 2194	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/741,860

Applicant(s)

MOORE ET AL.

Examiner

Li B. Zhen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12, 14-18, 20, 21, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 13 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1 – 4 and 6 – 24 are pending in the application.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/13/2007 has been entered.

#### ***Response to Arguments***

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Allowable Subject Matter***

4. Claim 19 is allowed.
5. Claims 13 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 1-4, 6-12, 14-18, 20, 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Designing a flexible services-based architecture for Internet Applications" [hereinafter Mehra, cited in the previous office action] in view of U.S. Patent No. 6,601,233 to Underwood.**

9. As to claim 1, Mehra teaches the invention substantially as claimed including an interface for interfacing between front-end data processing systems and back-end data processing systems [p. 31, figure in section 3, Client Layer and Database/Existing Applications], the interface comprising an engine [p. 31, figure in section 3, Context Processor], a node layer comprising at least one node [p. 31, figure in section 3, Business Logic Layer], and a utility layer comprising at least one utility [p. 31, figure in section 3, Interface], and in which:

the engine configured to receive a message containing a request from a front-end system for a transaction to be performed by a back-end system [p. 32, section 3.2.1],

each node represents business logic interfaces to a back-end system [p. 32, section 3.3.1],

each node exposes business logic capabilities to the engine [p. 32, the interface of the Business Controller Object, section 3.3.2];

each utility is coupled as a proxy to a back-end system, and is configured to for receiving a transaction request from a node, for converting said request to a back-end system request, for receiving a response from the back-end system, and for routing a response to the requesting node [p. 32, sections 3.4.1 and 3.4.2],

each node routes a received response to the engine [p. 32, section 3.2.1 "The business logic layer...returns an XML output data stream"]; and

the engine routes a response to the requesting front-end system [p. 32, section 3.2.1 "The style sheet rendering engine merges the XML data stream with the appropriate XSL template file to render HTML output to the browser."].

Although, Mehra teaches the invention substantially, Mehra does not specifically disclose the engines comprising means for interpreting the message to select a relevant node from a plurality of nodes for interfacing, wherein the engine does not contain any business logic, the message not containing an operation identifier of the transaction to be performed and the message specifying a list of parameters the node uses to perform operations based on the received request messages.

However, Underwood teaches interfacing between front-end data processing systems [col. 128, lines 47 – 57] and back-end data processing systems [col. 106, lines 1 – 16], an engine [application's web page logic 832 starts the activity 834, executes the sub-activity and creates the user interfaces; col. 29, lines 10 – 35] configured to receive a message containing a request from a front-end system for a transaction to be performed by a back-end system [MTS 600 intercepts the Customer creation request 602; col. 26, lines 18 – 43], and means for interpreting said message to select a relevant node from a plurality of nodes for interfacing [activity has the following responsibilities: Provide a "logical unit of work" context to all sub-activities within the activity. The Activity framework uses Microsoft Transaction Server (MTS) transactions to implement the "logical unit of work" concept; col. 29, line 43 – col. 30, line 19] the message not containing an operation identifier of the transaction to be performed [transparently make requests of and receive responses from other objects located locally or remotely; col. 117, lines 37 – 50] wherein the engine does not contain any business logic [No business logic is contained directly in the web page code; col. 29, lines 11 – 35];

the engine comprises means for using the exposed node business logic capabilities [col. 54, lines 1 – 17] to automatically build a process map [activity maintains a context and provides a "logical unit of work" for a specific business functionality; col. 30, lines 1 – 20] linking received request messages with nodes, wherein the engine uses the process map to select the relevant node from the plurality of nodes [sub-activity 838 executes a sub-part of the overall activity business logic; col.

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30, lines 1 – 20], the process map comprising script messages each message of the process map specifies an associated node [view 840 defines the mapping between a user interface and business components containing the values to display; col. 30, lines 20 – 46], a list of the parameters the node requires and values which it returns for a type of incoming message [view has the following responsibilities: Unplugging the user interface from the business component values. Automatically and transparent to the developer, capture all the values entered by the user and update the related business components; col. 30, lines 20 – 46]; and

each utility is coupled as a proxy to a back-end system, and is configured to for receiving a transaction request from a node, for converting said request to a back-end system request, for receiving a response from the back-end system, and for routing a response to the requesting node [DCOM Component connector uses COM proxy components that map to SAP Business Objects; col. 20, lines 12 – 67].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Mehra to incorporate the features of interpreting the message to select a relevant node from a plurality of nodes for interfacing, wherein the engine does not contain any business logic, the message not containing an operation identifier of the transaction to be performed and the message specifying a list of parameters the node uses to perform operations based on the received request messages because this provides the benefits of a component-based system, which includes the ability to separate the component interfaces from their

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implementation and help enormously with access to both third party components and legacy applications [col. 96, lines 36 – 67 of Underwood].

10. As to claim 20, Mehra as modified teaches a method of interfacing between front-end data processing systems and back-end data processing systems [p. 31, figure in section 3, Client Layer and Database/Existing Applications of Mehra], the method being performed by an interface comprising an engine [p. 31, figure in section 3, Context Processor of Mehra] for communicating with the front-end systems and a utility layer for communicating with the back-end systems, the method comprising the steps of:

the engine receiving from a front-end system a message incorporating a request for a transaction to be performed by a back end system but not indicating a particular back-end system suitable for the transaction [p. 32, section 3.2.1 of Mehra], wherein the message does not include an operation identifier identifying the transaction to be performed [transparently make requests of and receive responses from other objects located locally or remotely; col. 117, lines 37 – 50 of Underwood],

the engine using a process map [activity maintains a context and provides a "logical unit of work" for a specific business functionality; col. 30, lines 1 – 20 of Underwood] to select one of a plurality of nodes in a node layer which may provide a suitable link to the back-end systems for the request [sub-activity 838 executes a sub-part of the overall activity business logic; col. 30, lines 1 – 20 of Underwood], the process map being automatically built [activity maintains a context and provides a "logical unit of work" for a specific business functionality; col. 30, lines 1 – 20 of Underwood] to link message types to nodes according to exposed business logic



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capabilities of the nodes [col. 30, lines 1 – 20 of Underwood] and comprising script messages [col. 30, lines 20 – 46 of Underwood], each message specifying an associated node [col. 30, lines 20 – 46 of Underwood], a list of the parameters the node uses to perform operations based on the received message [col. 30, lines 20 – 46 of Underwood], and values which it returns for a type of incoming message [col. 30, lines 20 – 46 of Underwood], wherein the engine does not contain any business logic [No business logic is contained directly in the web page code; col. 29, lines 11 – 35 of Underwood], the engine passing a request to the selected node [p. 32, the interface of the Business Controller Object, section 3.3.2 of Mehra], the selected node communicating with a utility with which it is associated to instruct the utility to perform the transaction, receiving a response from the utility, and passing the response back to the node [p. 32, sections 3.4.1 and 3.4.2 of Mehra], and

the node passing the response back to the engine [p. 32, section 3.2.1 “The business logic layer...returns an XML output data stream” of Mehra], and the engine passing the response back to the requesting front-end system [p. 32, section 3.2.1 “The style sheet rendering engine merges the XML data stream with the appropriate XSL template file to render HTML output to the browser” of Mehra].

11. As to claim 24, this is a product claim that corresponds to method claim 20; note the rejection to claim 20 above, which also meets this product claim.

12. As to claim 2, Mehra as modified teaches the engine comprises means for dynamically maintains the process map according to the exposed node business logic capabilities [col. 28, lines 26 – 55 of Underwood].

13. As to claim 3, Mehra teaches the process map comprises a script file [XML is used for structured data message; Section 2, p. 31].

14. As to claim 4, Mehra as modified teaches each message having a map associating incoming parameter names with standardised names [Call the SAP connector standard method; col. 21, lines 25 – 61 of Underwood].

15. As to claim 6, Mehra teaches that the utilities interface with the node layer according to a uniform interface model [“...that provide an abstraction layer that encapsulates access...”; section 3.3.2, p. 32].

16. As to claim 7, Mehra as modified teaches the engine calls a plurality of nodes for a transaction request [sub-activity 838 executes a sub-part of the overall activity business logic; col. 30, lines 1 – 20 of Underwood].

17. As to claim 8, Mehra as modified teaches the engine is configured for calling nodes in sequence, and for passing the output from a previous node to a next node [col. 28, lines 25 – 54 of Underwood].

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18. As to claim 9, Mehra as modified teaches the engine and each node uses a hashtable mapping keys to values for passing data and control to each other [col. 54, lines 1 – 18 of Underwood].
19. As to claims 10 and 11, Mehra as modified teaches the engine and the nodes each use a hashtable for returning a result from a back-end system [col. 19, lines 20 – 41 of Underwood].
20. As to claim 12, Mehra teaches each of the engine and each node comprise an object instantiated from an object-oriented class [section 3.3.2, p. 32].
21. As to claim 14, Mehra as modified teaches the engine is configured for activating a sequence of nodes for a transaction [sub-activity 838 executes a sub-part of the overall activity business logic; col. 30, lines 1 – 20 of Underwood], and each node is configured for performing a rollback if a transaction fails [col. 124, lines 45 – 53 of Underwood].
22. As to claim 15, Mehra as modified teaches the engine comprises an externally visible engine class ["Servlet"; section 3.2.2 "Servlet" of Mehra], an object of which comprises means for instantiating: a processor object for instantiating said node objects ["Business Object Factory"; section 3.3.1, p. 31 of Mehra]; and a loader object for loading the process map, and for determining node objects associated with a received message [col. 27, lines 11 – 18 of Underwood].

23. As to claim 16, Mehra as modified teaches the engine is configured for instantiating a parser object for parsing a received message [col. 98, lines 40 – 52 of Underwood], for placing extracted data in a hashtable, and for returning the hashtable to the engine object [col. 19, lines 20 – 41 of Underwood].

24. As to claim 17, Mehra as modified teaches the engine comprises a builder object configured for automatically updating the process map according to capabilities exposed by node classes [col. 20, lines 42 – 55 of Underwood].

25. As to claim 18, Mehra as modified teaches each node class comprises a method for returning a string to the engine indicating the node capabilities [col. 13, line 35 – col. 14, line 15 and col. 31, lines 5 – 54 of Underwood].

26. As to claim 21, Mehra as modified teaches the engine dynamically creates a node object according to parameters retrieved from the process map [col. 26, line 64 – col. 27, line 13 of Underwood], the engine passes data from the received message to the created node object [col. 54, lines 1 – 18 of Underwood], and data is passed between the node object and the engine by passing a hashtable linking keys with associated data [col. 19, lines 20 – 41 of Underwood].

27. As to claim 23, Mehra teaches the process map is an XML script file [section 3.1.1, p. 31].

#### **CONTACT INFORMATION**

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28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768.


The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on 571-272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Li B. Zhen  
Examiner  
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LBZ

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